

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 9-18 will be pending in the application subsequent to entry of this Amendment.

Discussion of Amended Claims

The original claims have been amended and directed to preferred aspects of the disclosure as explained below.

The present invention is based on the surprising finding that encapsulated cinnamate derivatives incorporated into a sunscreen composition exhibit a significant stability problem upon irradiation even though the cinnamate derivative is protected from interactions with molecules at the other side of the wall (which is the invention of Lapidot). This surprising finding and a solution therefore is the basis for the present invention.

The new claims presented above are restricted to UV-B and broad spectrum absorbers in order to clearly differentiate them from the disclosure of Lapidot that UVA chromophores may interact with octyl methoxycinnamate (Lapidot, page 1, line 26 to page 2, line 2) and this interaction can be avoided by encapsulation of either of them (or both, *see* page 2, last paragraph).

New claim 9 is directed to a method of enhancing the photostability of an encapsulated cinnamate derivative in a topical sunscreen composition by introducing into such a sunscreen composition an effective amount of at least one additional non-encapsulated sunscreen which is a UV-B or a broad spectrum sunscreen or both. Claim 9 is a combination of former claim 1 in combination with the disclosure of page 1, lines 21-22 in combination with page 2, lines 1-6.

A new dependent claim 17 has been introduced, specifying the additional UV-B and broad spectrum sunscreen. The basis for this amendment is found on page 5, line 10 to page 6, line 18 of the description.

New claims 10-12 relate to original claims 3-5. New claim 13 is based upon original claim 6 with the “preferably” aspects of original 6 the subject of separate dependent claims 14 and 15. Claim 16 corresponds to original claim 7 and new claim 18 relates to original claim 8.

The examiner will note that claims 9, 13 and 18 are written in independent form.

It is submitted that the revised claims presented above further define the invention and additionally distinguish it from the cited prior art and that these claims are in proper formal order

and compliant with 35 USC §112, first and second paragraphs. No subject matter has been added.

Original claims 1-8 stand rejected as allegedly being anticipated by WO 00/71084 to Lapidot et al. Before discussing the deficiencies of the applied reference and the features of applicants' amended claims, it is important to remember the requirements of establishing anticipation. To anticipate a claim, a single reference must disclose the claimed invention with sufficient clarity to prove its existence in the prior art. *Motorola Inc. v. Interdigital Technology Corp.*, 43 USPQ2d 1481, 1490 (Fed. Cir. 1997). Anticipation rejections are only proper when the "claimed subject matter is identically disclosed or described in 'the prior art,' without *any* need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference." *In re Arkley*, 172 USPQ 524, 526 (CCPA 1972). Absence from the reference of any claimed element negates anticipation *Kloster Speedsteel AB v. Crucible Inc.* 23 USPQ 160 (Fed. Cir. 1986).

Thus, applicants' claims are patentable over Lapidot since it each fails to disclose each element of applicants' claims.

Lapidot discloses a method for obtaining improved photostability of a sunscreen compositions which contains at least two sunscreen active ingredients, which are photo-unstable when formulated together (p. 3, lines 8-10).

Lapidot discloses that photostability issues may occur when UVA filters are combined with UVB filters (page 1, lines 26-27). In particular Lapidot refers to the well known photo induced interaction of the UVA filter butylmethoxydibenzoylmethane (BMDBM) with the UVB absorber octyl methoxycinnamate (OMG) (page 1, paragraph 3). This cross reactivity contributes significantly to the photochemical instability of both the UVB and UVA active ingredients.

Additionally, Lapidot discloses that BMDBM (not the cinnamate derivative) undergoes photo induced interactions with physical sunscreen agents such as titanium dioxide or zinc oxide (page 2, second paragraph). The solution provided in Lapidot is to encapsulate one of the sunscreen active ingredients in order to avoid the cross reactivity.

Lapidot contains, however no indication that encapsulated cinnamate derivatives itself exhibit a lack of stability upon irradiation (*see* the present application p.1, lines 20-22 and example 1 on page 15, Table 2), i.e. that the cinnamate derivatives react with themselves within

the shell resulting in a deactivation of the active ingredient. Furthermore, there is no indication in Lapidot how this stability problem of the encapsulated cinnamate derivative can be solved.

Surprisingly, it has been found that the stability of the cinnamate derivatives within the shell can be significantly enhanced by the addition of an UV-B or a broad spectrum sunscreen.

This is illustrated in example 1, Table 2 of the present invention: The addition of a UVB sunscreen such as e.g. 4-methylbenzylidene camphor or a broad spectrum sunscreen such as e.g. TiO₂ enhances the photostability of the encapsulated OMG from 35% to 60 % and more. The addition of a UVA sunscreen alone (i.e. avobenzone), however, only increases the photostability by to about 48%.

Thus, the amended claims are novel in view of Lapidot. Withdrawal of this rejection is appropriate.

Response to Provisional Non-Statutory Obviousness-Type Double Patenting Rejection

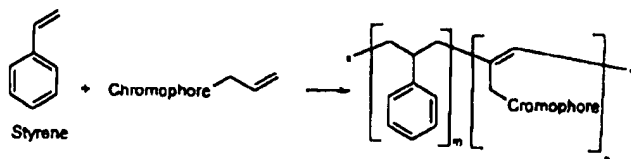
Item 6 of the Official Action asserts that claims 1-8 as examined are unpatentable over claims 1, 3 and 20 of co-pending application no. 11/666,666 in light of the reference discussed above. Counsel notes that this is a provisional rejection as neither this application nor the pending application are allowed or allowable. Although the rejection is a provisional one applicants wish the examiner to consider the following observations and comments with a view to withdrawing this provisional rejection.

Applicants submit that co-pending Application No 11/666,666 has nothing in common with the present invention, despite the fact that both applications are concerned with UV-light absorbing entities and with sunscreen compositions comprising them, also in combination with further known sunscreens.

Application No. 11/666,666 relates to polymeric particles comprising covalently bound chromophores selected e.g. from cinnamates (11/666,666, claim 3) and cosmetic compositions comprising such UV-light absorbing particles (11/666,666 claim 20). Such particles are obtainable by copolymerization of a chromophore carrying an active group suitable for polymerization. The particles constitute a novel UV-absorbing polymer which, of course, can be incorporated into a sunscreen composition.

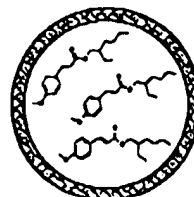
In the present invention, the encapsulated cinnamate derivative constitutes the UV-light absorbing entity, which also can be incorporated into a sunscreen composition. In contrast to the

polymeric particles of Application No, 11/666,666, the sunscreen, i.e. cinnamate, is not covalently bound to the polymer but encapsulated as monomers (oil) in a polymeric shell (*see* picture below for illustration).



Copolymerisation

Application No. 11/666666



Encapsulation

Present invention

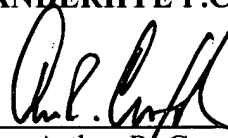
As there is no double patenting this provisional rejection should be withdrawn.

Having responded to all of the pending rejections contained in the Office Action, applicants submit that their claims are in condition for allowance and earnestly solicit an early Notice to that effect. The examiner is also invited to contact the undersigned if any further information is required.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____


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